operate the engine is reduced without a loss of energy content in the fuel supply. Accordingly, the use of this volatile organic compound destruction system **10** results in substantially complete destruction of the volatile organic compound while reducing the amount of primary fuel required to operate an engine for the generation of electricity.

Thus, it will be appreciated that device **10** provides significant advantages over prior art designs for destruction of VOCs. For example, in accordance with experiments preformed using devices embodying preferred aspects of the present invention, substantial destruction of VOC laden air efficiency (e.g. at rates above 99.5%) at a level of about 6200 $ft^3$/min can be obtained with the production of a nominal 525 kw of electrical power.

To illustrate the overall impact of the present invention, consider a typical plant using 640,000 kw hours per month with a need to consume 12,000 cubic feet per minute of air laden with 3,500 parts per million of a VOC. Consider further that the plant consumes 97,000 therms of fossil fuel each month. Without control, over 800 metric tons per year of VOC's are released into the atmosphere.

While prior art techniques (e.g. use of a thermal oxidizer) may reduce the emission to less than 50 metric tons per year of VOC's, use of such devices increases the plant energy consumption to about 125,000 therms per month.

In contradistinction, through use of a device embodying the present invention, effective VOC control is enabled with less energy. Specifically, in this example, the energy consumed and therefore, total fossil fuels burned, falls to 81,000 therms per month. Not only are the total operating costs for the plant reduced, but there is also a net reduction in the emission of carbon dioxide, nitric oxide and sulfur oxide. The sum effect of use of the present invention to control volatile organic emissions is thus cleaner air, less fossil fuel consumption and resulting lower costs.

It will be understood that the foregoing description is of the preferred exemplary embodiments of the invention, and that the invention is not limited to the specific forms shown. Various modifications may be made in the design and arrangement of the elements set forth herein without departing from the scope of the invention as expressed in the appended claims.

We claim:

1. A method of destroying volatile organic compounds (VOCs) comprising the steps of:

collecting air laden with the VOCs;

compressing said VOC laden air in a compressor;

providing a primary fuel stream;

combusting said primary fuel stream in a combustor to create a first stream of combustion gases;

directing said first stream of combustion gases to a reaction chamber;

directing said compressed VOC laden air into said reaction chamber to create a second stream of combustion gases;

reacting said first and second streams of gases for substantially destroy said VOC's and create a resulting stream of combustion gases;

directing said resulting stream of combustion gases to drive a power generator; and

recovering power from operation of said power generator.

2. The method of claim 1 further comprising the step of:

controlling the flow of said collected VOC laden air and said primary fuel stream to maintain a substantially stoichiometric reaction in said reaction chamber.

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